309.1 - Impact Standards: Charpy V-Notch and Izod Impact Specimens

These SRMs are test specimens intended primarily for the verification of Charpy V-Notch testing machines and Izod testing machines. The dimensions of these SRMs comply with the current ASTM Standard E23 and the current ISO 148-1 Standard.

SRMs 2092, 2096, and 2098 are NIST-Verification Charpy V-notch specimens that have a post-test evaluation service and proficiency test data available with them. SRMs 2092 and 2096 are to be tested at -40° C; SRM 2098 is to be tested at room temperature (21 °C). These SRMs should be tested (broken) at the same time, then returned to NIST Boulder for evaluation. An acceptable machine will produce an average value within 1.4 J or 5% of the certified energy value, whichever is greater.

SRMs 2093 and 2097 are Self-Verification Charpy V-notch specimens that do not have any post-test services available with them. These SRMs provide a lower cost option for the Self-Service user. SRMs 2093 and 2097 are to be tested at -40° C; These SRMs are not returned to NIST Boulder for evaluation.

SRMs 2112 and 2113 are NIST-Verification Charpy V-notch specimens that are certified for absorbed energy at two test temperatures and are also certified for maximum force. These SRMs provide a means to verify the performance of the energy and force scales of an instrumented Charpy impact machine at room temperature (21 °C). They can also be used to verify just the energy scale of a machine at -40° C, interchangeably with SRMs 2092 and 2096. Theses SRMs should be tested (broken) at the same time, then returned to NIST Boulder for evaluation. An acceptable machine will produce an average value within 1.4 J or 5% of the certified energy value, whichever is greater. Currently formal bounds are not available to verify the performance of the force scale for a Charpy impact test machine.

SRM 2115 is a NIST Izod specimen. Each SRM consists of a set of specimens needed to perform one evaluation. This SRM complies with ASTM Standard E23 dimensional requirements for the Izod (Cantilever Beam) impact specimen, Type D, geometry.

SRMs 2216, 2218, and 2219 are intended for the verification of maximum force and absorbed energy values measured at room temperature using a small-scale Charpy impact machine in accordance with the current standards ASTM E2248 or ISO 14556, Annex D. Each SRM unit consists of a set of three KLST-type specimens needed to perform a single verification.

PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

			Energy Value
SRM	**Description**	**Unit of Issue**	**(J)**
2092	Low-Energy Charpy V-Notch Impact Specimen (NIST-Verification)	set	13 to 20
2093	Low Energy Charpy V-Notch Impact Specimen (Self-Verification)	set	
2096	High-Energy Charpy V-Notch Impact Specimen (NIST-Verification)	set	88 to 133
2097	High Energy Charpy V Notch Impact Specimen (Self-Verification)	set	
2098	Super High-Energy Charpy V-Notch Impact Specimen (NIST-Verification)	set	176 to 244
2112	Dynamic Impact Force Verific Specimens (Nominal 24kN)	set	
2113	Dynamic Impact Force Verification Specimens (Nominal 33kN)	set	
2115	Low Energy Izod Impact Specimen (NIST-Verification)	set	13 to 25
2216	Miniaturized Low Energy Charpy, V Notch KLST Impact Specimen	set	1.59
2218	Miniaturized Hi Energy Charpy, V Notch KLST Impact Specimen	set	5.65
2219	Miniaturized Super High Energy, Charpy VNotch KLST Impact Spec	set	10.08

- Certified values are normal font
- Reference values are italicized
- Values in parentheses are for information only